PVIA!1

Single Zone VIA!® Wall Plate Installation Manual

ELAN®
HOME SYSTEMS

Important Information

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Changes or modifications not expressly approved by ELAN could void the user's authority to operate this equipment.

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Introduction

The PVIA®1 Wall Plate Precision Panel is designed to simplify the installation of ELAN VIA!® Touch Panels and provide a reliable, logical connectivity solution. Designed to work with all in-wall models (4.0EM, 7.0EM, 10.0EM), the PVIA1 has provisions for each connection type required for a complete in-wall installation. For multiple VIA! Touch Panel installations, PVIA®4, PVIA®10 and SPP Precision Panels may be used to ensure secure connections and help save time when dealing with complex wiring jobs.

The PVIA1 Wall Plate is needed for each VIA! Touch Panel in-wall model.

- Use in stand-alone systems wherever a VIA! Touch Panel is needed
- Use in ELAN S Series systems wherever a VIA! Touch Panel is needed
- Use for local system control - perfect for Home Theaters!

Features

- Provides Power, IR & Video routing to a single VIA! Touch Panel
- IR output port
- Status Sense input
- Video input (Composite connector-to-F connector video pass-through)
- Rear panel connector for S Series Precision Panel interface
- Single-gang Decora® format
- PWR1 plug-in power supply included

A second version of the PVIA1 (PVIA1 Valet) is used for VIA! Valet®Touch Panel installations. The PVIA1 Wall Plate version is required for use with the ELAN VIA! SC-4 and SS1 System Station RS-232 controllers. There are also instances where the two PVIA1 versions are used together.

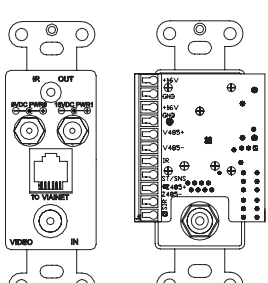

Figure 1-1: PVIA1 In-Wall

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PVIA1 Wall Plate Front/Rear Panel

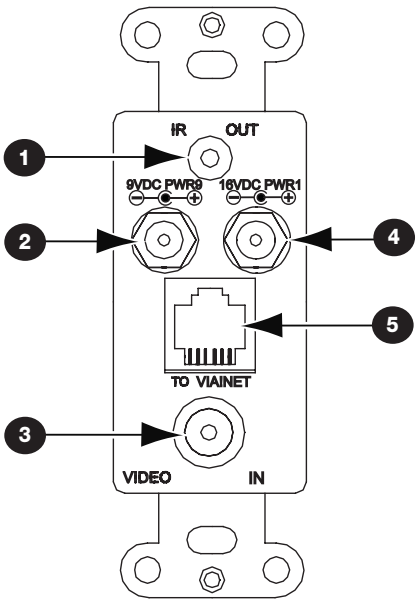

Figure 1-2: Front Panel Callout

Item	Input/Output	Description
1	IR Output	3.5mm Mono Mini jack
2	9 VDC Power Sense In	9 VDC PWR Cube Connection
3	Composite Video In	Coaxial Video Cable Connector
4	16 VDC Power Jack	16 VDC 1 Amp PWR1 Connection
5	RJ-45 Output	System RJ-45 Cable Jack

Table 1-1: Front Panel Callout

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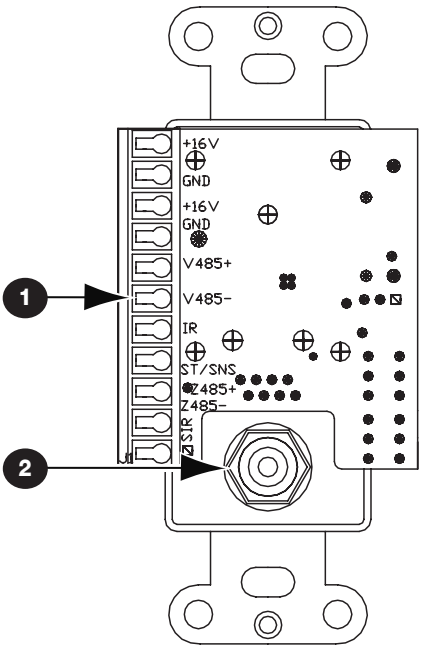

Figure 1-3: Rear Panel Callout

Item	Input/Output	Description
1	CAT-5 Terminal Strip	Terminate CAT-5 conductors
2	Coaxial Video Output	Coaxial Video Cable Connector

Table 1-2: Rear Panel Callout

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System Design

Proper system design ensures that all parts of a whole-house audio/video system work together to provide the desired results. Each part of the system (source A/V components, keypads, speakers, and the multi-room controller, for example) must be carefully chosen and a location specified for each device. Wiring needs must be carefully planned for. Building codes and contruction methodology must be factored in to provide a safe and properly functioning system. Before beginning any installation, it is advisable to consult a set of building plans and a list of equipment and map out each part of the system. Make sure to carefully locate speakers, keypads, touchpads, touch panels, and wire runs so as to avoid interference with other household devices such as plumbing, doors, windows, and high-current electrical wires.

System Design is typically comprised of Prewire, Rough-In, and Trim-Out. The following sections will describe each phase of the installation process as they pertain to installing ELAN VIA! Touch Panels and the PVIA1 Precision Panel specifically.

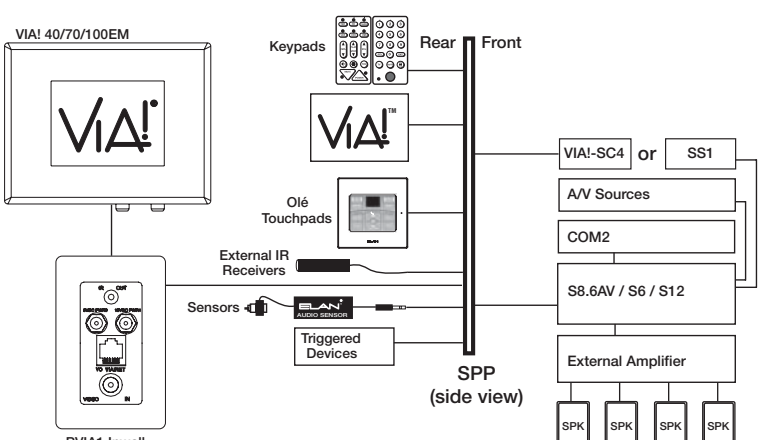

Figure 2-1: System Design

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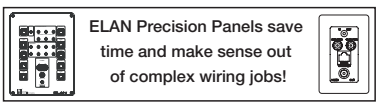
WIRE RUNS

Runs of Cat-5 for IR and Data transmission and RG-6 or RG-59 for Video signals are required between the VIA! Touch Panel, PVIA1 Wall Plate and the central equipment location. If the VIA! Touch Panel is powered locally only a single run of Cat-5 and a single run of coax will be necessary.

If the VIA! Touch Panel is to be powered by a power supply located at the "head-end" location of a multi-room system, refer to the table on the following page for minimum wiring requirements.



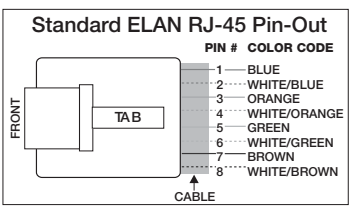


Figure 2-2: ELAN RJ-45 Pin-Out

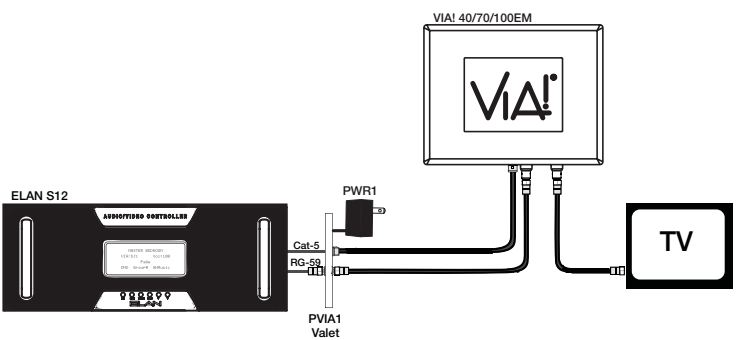


Figure 2-3: Wiring Overview

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These are the maximum wire run lengths when using the following cables to provide power to the VIA! Touch Panel when the power supply is located in the “head-end”:

24 AWG Cat-5	18 AWG Stranded	16 AWG Stranded	14 AWG Stranded
110 ft.	**225 ft.**	**360 ft.**	**575 ft.**

Table 2-1: Maximum Wire Lengths

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Applications

Local System or Home Theater Control Using VIA! Touch Panels

The VIA! Touch Panel utilizes Cat-5 and RG-59 or RG-6 coaxial cable for the Transmission of Power, IR and Video signals between the PVIA1 Wall Plate and the VIA! In-Wall Touch Panel.

The VIA! Touch Panel can be used for any stand-alone (non-ELAN) system application or as a Home Theater controller. ***Figure 2-4*** below shows a basic application using one VIA! Touch Panel, a PVIA1 Wall Plate and an ELAN IR Emitter to control an A/V Receiver.

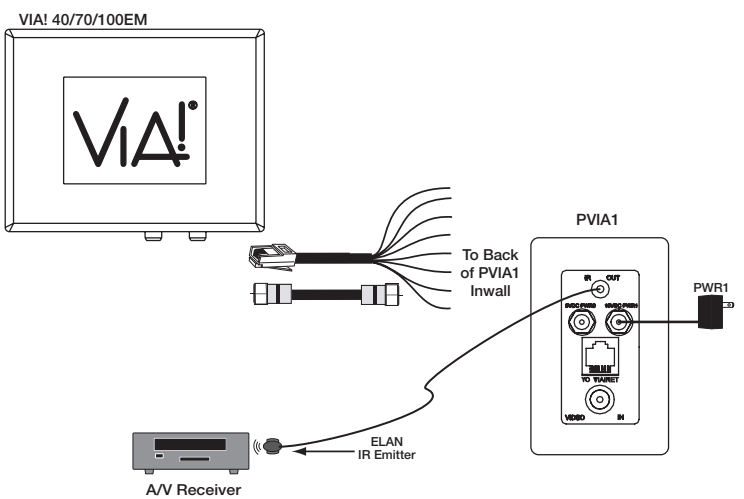

Figure 2-4: Stand-Alone Application

NOTE: When IR is connected to the front of the PVIA1 In-Wall, IR pass-through on the rear is disabled

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Stand-Alone System- Expanded

Stand-alone systems (without an ELAN multi-room controller) can be as simple as one VIA! Touch Panel controlling one IR source, or as complex as a VIA! Touch Panel, System SS1, ELAN Sensors all controlling many IR sources and Serial devices as shown in ***Figure 2-6***. ***Figure 2-5*** below shows a VIA! Touch Panel, A PVIA1 Wall Plate, four VIA!70EMs and a PVIA4 Wall Plate controlling a stack of A/V gear. See VIA!Tools for additional programming details.

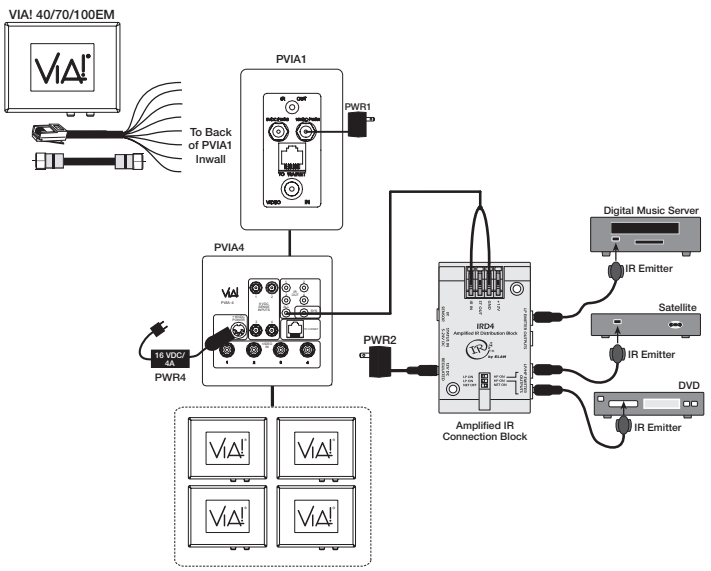

Figure 2-5: Stand-Alone Expanded Application

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Stand-Alone System w/ RS-232 Subsystems

This application adds the control capabilities of an SS1 System Station to control a projection screen and drapes using relays and a 1 and 2-way RS-232 control devices. Consult the SS1 System Station manual for details.

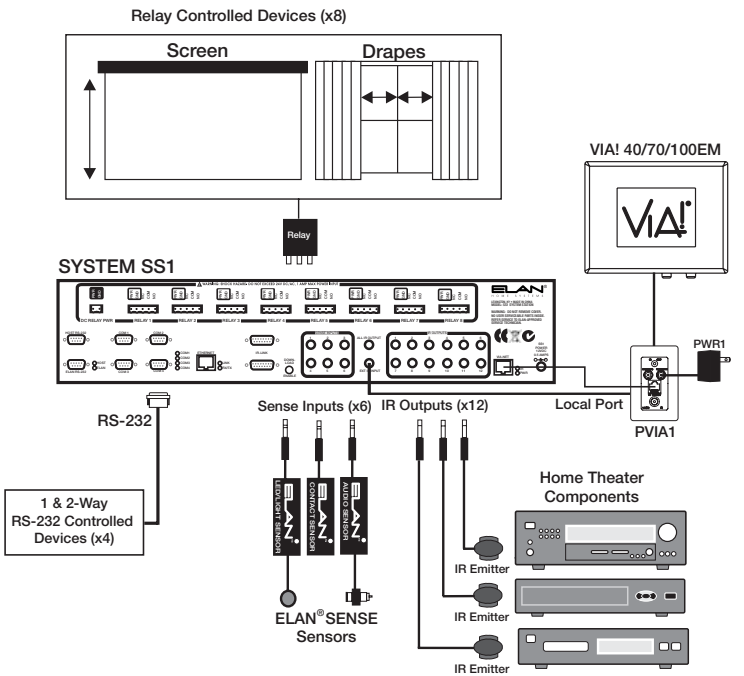

Figure 2-6: Stand-Alone System w/ SS1 System Station

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System12 (S12)

ELAN's SPP Precision Panel for the System12 Multi-Room A/V Controller (S12) makes quick work out of configuring a VIA! Touch Panel to control S12 zones. A PVIA1 Wall Plate may be used when adding a VIA! Touch Panel with an S12 for local power and local source control. The ***Figure 2-7*** below shows one VIA! Touch Panel, one PVIA1 Wall Plate, ten VIA!70EM Touch Panels, and an SPP connected to an ELAN S12.

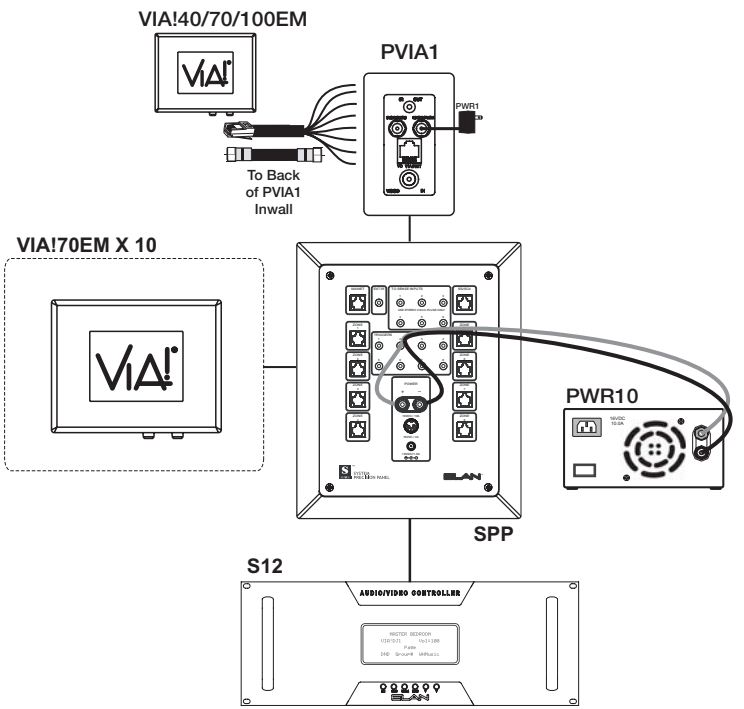

Figure 2-7: S12 Application

NOTE: A PS12 Precision Panel may also be used with System12 applications.

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System8 (S8)

The VIA! Touch Panel flexibility makes it a good candidate for System8 (S8.6) applications. A PVIA1 Wall Plate may be used when adding a VIA! Touch Panel with an S8 for local power and local source control. The ***Figure 2-8*** below shows a VIA! Touch Panel, a PVIA1 Wall Plate, ten VIA!70EMs and a SPP Precision Panel configured for use with an ELAN S8.6.

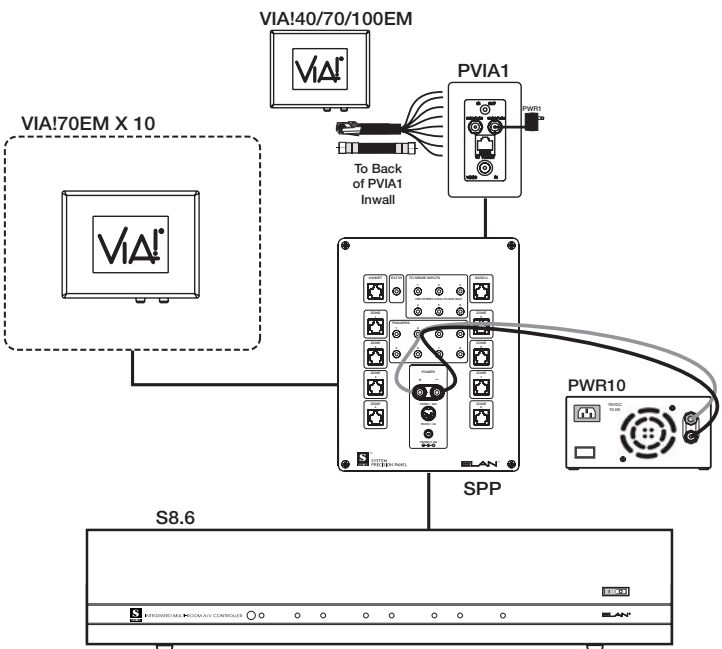

Figure 2-8: S8 Application

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System6 (S6)

The VIA! Touch Panel is ideal for System6 (S6) applications. A PVIA1 Wall Plate may be used when adding a VIA! Touch Panel with an S6 for local power and local source control or if an SPP Precision Panel is not being utilized. The ***Figure 2-9*** below shows a VIA! Touch Panel, a PVIA1 Wall Plate, ten VIA!70EMs and a SPP Precision Panel configured for use with an ELAN S6.

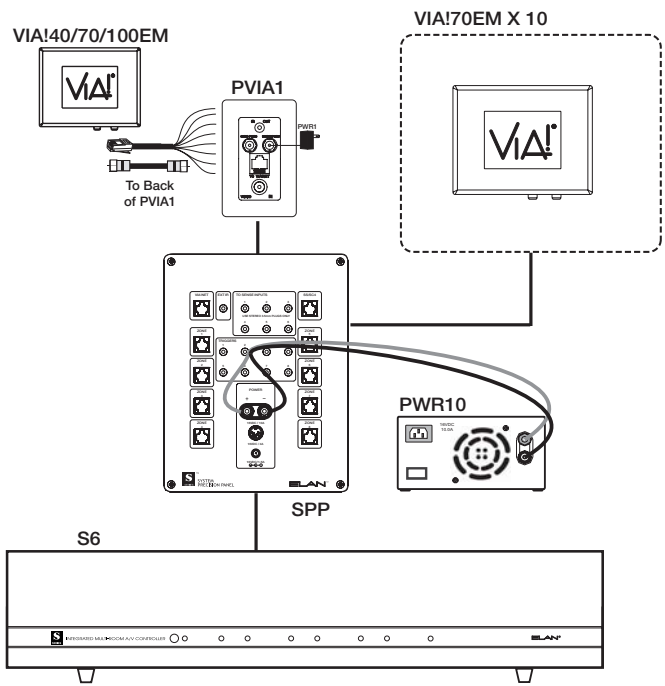

Figure 2-9: S6 Application

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Connections

Rear Panel

ELAN recommends using Cat-5 cable for connections to the VIA! Touch Panel from the PVIA1 Wall Plate. Refer to the wiring diagram for the system being used for the correct pin-out.

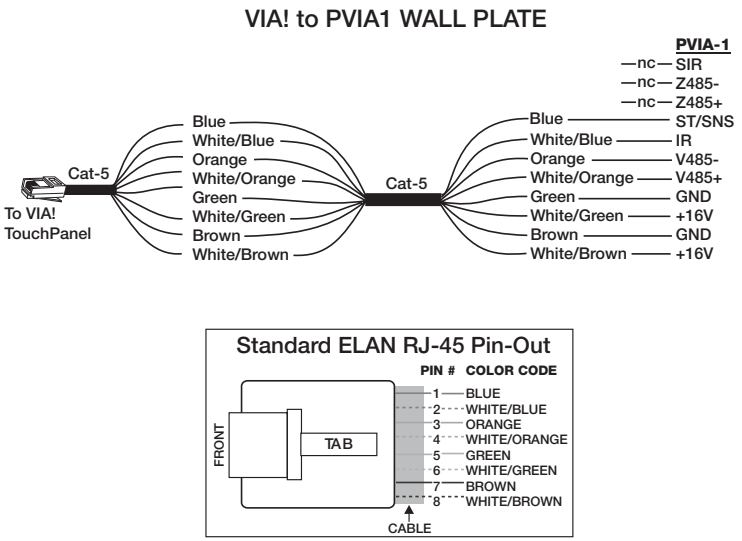
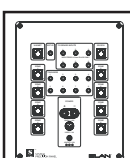


Figure 3-1: PVIA1 Wiring to VIA! Touch Panel



ELAN Precision Panels save time and make sense out of complex wiring jobs!

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Stand-Alone/Home Theater

The VIA! Touch Panel is ideal for use as a stand-alone system controller or Home Theater controller. For control of a Home Theater system, the VIA! Touch Panel and PVIA1 Wall Plate are combined with a method for IR distribution such as ELAN's IRD4 Amplified Connection Block. Signals originate at the VIA! Touch Panel, pass through the PVIA1 Wall Plate, then travel to the connection block where they are routed to each component.

NOTE: *This application does not allow for independent control of identical sources. An ELAN multi-room controller or SS1 System Controller should be used in that scenario.*

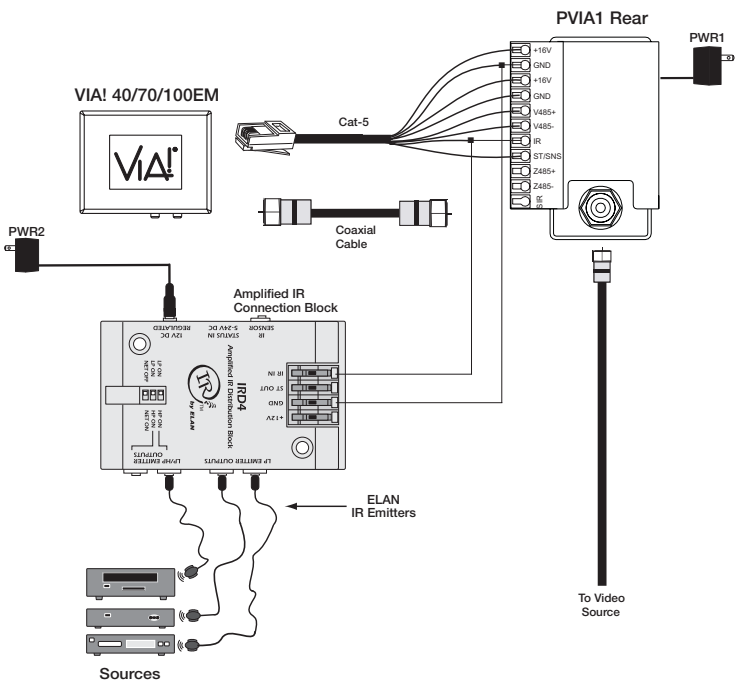

Figure 3-2: Stand-Alone Connections

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ELAN System12 (No SS1-SC4)

ELAN's **System12 (S12)** eight-source, eight-zone Multi-Room A/V Controller was designed with VIA! Touch Panels in mind. Use a PVIA1 when connecting a single VIA! Touch Panel to an S12. Connect the PVIA1 Wall Plate to the VIA! Touch Panel as shown. Connect IR, RS485+/- and GND between the PVIA1 Wall Plate and the S12 Zone Input RJ-45 as shown. Please consult the PS12 or SPP precision Panel Installation Manual for additional details when connecting multiple VIA! Touch Panels to an S12.

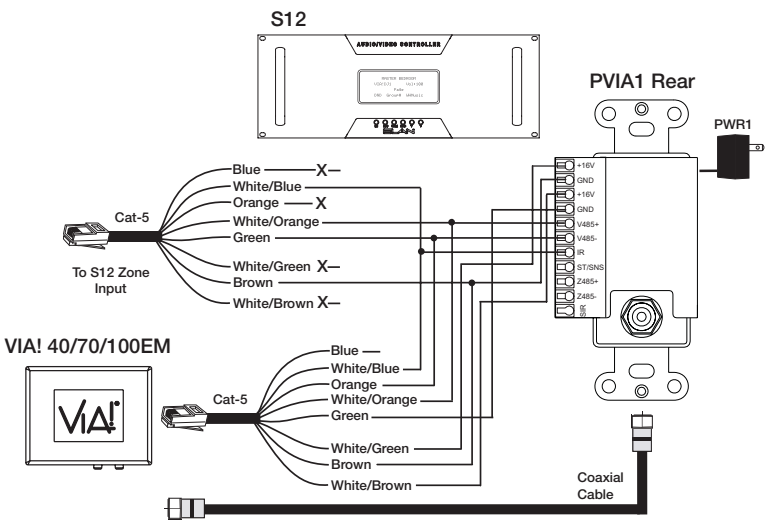
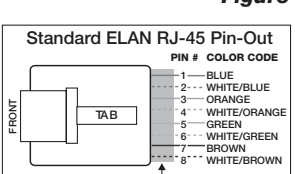
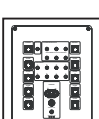


Figure 3-3: PVIA1 to S12





ELAN Precision Panels save time and make sense out of complex wiring jobs!

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ELAN System8

Use a PVIA1 Wall Plate when installing a single VIA! Touch Panel in a **System8 (S8)** eight-source, six-zone Integrated Multi-Room Controller. Connect the PVIA1 Wall Plate to the VIA! Touch Panel as shown below. Connect IR, V485+/-, and GND between the PVIA1 Wall Plate and the S8 Zone Input RJ-45, as shown. Multiple VIA!s will connect to an SPP Precision Panel in an S8 installation. Please consult the SPP Precision Panel Installation Manual for additional details.

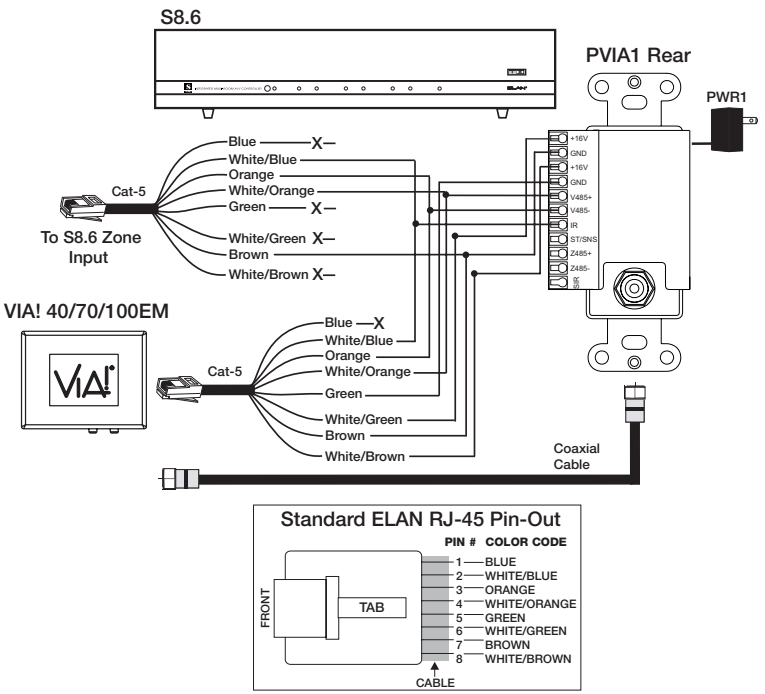

Figure 3-4: PVIA1 to S8

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ELAN System6 (No SS1-SC4)

Use VIA! Touch Panels to add functionality and flexibility to ELAN's **System6 (S6)** six-source, six-zone Integrated Multi-Room Controller. A PVIA1 Wall Plate is recommended when interfacing a VIA! Touch Panel to an S6. Connect PVIA1 Wall Plate to the VIA! Touch Panel as shown. Connect IR, V485+/- and GND from the PVIA1 Wall Plate to an ELAN C45P, then connect to the S6 as shown below. Multiple VIA!s will connect to a PVIA4/10 or SPP Precision Panel.

NOTE: It is recommended to use an SPP Precision Panel whenever possible. When connecting to a SPP Precision Panel see the connection diagrams for S12 and S8 or consult the SPP Precision Panel Manual for additional details.

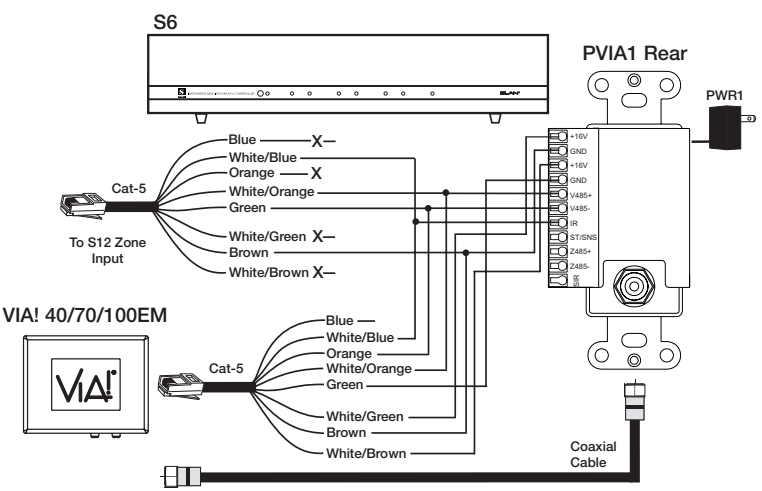

Figure 3-5: PVIA1 to S6

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Chaining PVIA Wall Plates

SPP/PVIA1 In-Wall

The SPP Precision Panel provides power and signal routing for up to Ten VIA! Touch Panels. For each VIA! Touch Panel above this limit, a PVIA1 Wall Plate may be connected to the SPP. Connect IR, V485+/-, and GND between the PVIA1 Wall Plate and the SPP, as shown below.

VIA! Touch Panels connected this way will be powered locally by the power supply that comes with the PVIA1.

For complete SPP Applications & Connections refer to the SPP Installation Manual.

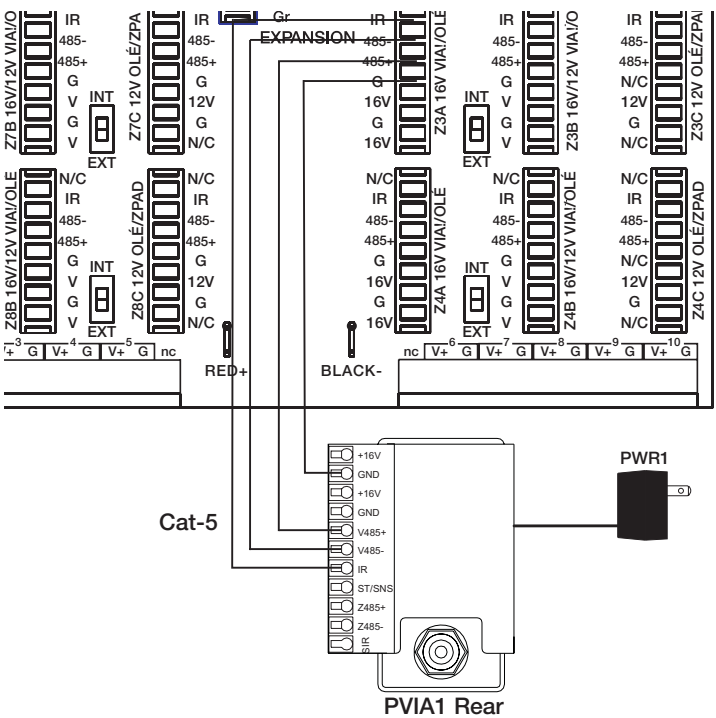

Figure 3-6: PVIA1 Wall Plate Chained to SPP Precision Panel

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PVIA4/PVIA1 In-Wall

In a PVIA4 application, adding a fifth VIA! Touch Panel requires the use of a PVIA1 Wall Plate. ***Figure 3-7*** illustrates the use of a PWR1 Power Supply to provide power to the PVIA1 when interfacing with a PVIA4.

Connect IR (if adding VIA! to an existing zone), V485+/-, and GND between the PVIA1 Wall Plate and the 110 punchdown connector on the PVIA4. Punchdown an ELAN C45P to the **XLink** 110 connector and connect to the ELAN multi-room controller as shown in the example below.

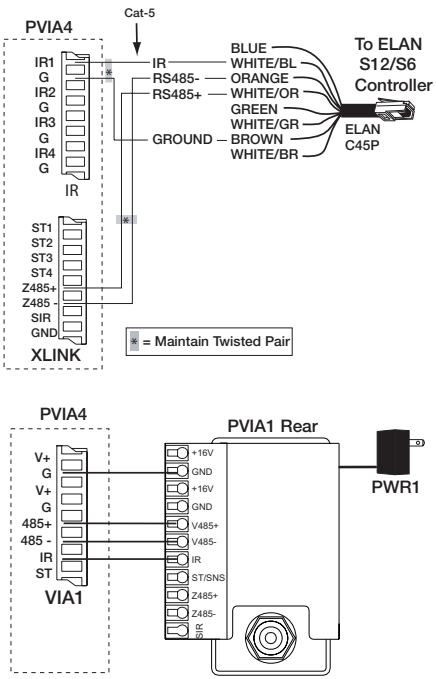

Figure 3-7 PVIA1 Wall Plate / PVIA4 chain

Note: The S8 Controller, generates VNET information for status feedback. The S8 uses the White/Orange stripe conductor for RS-485+ and Orange for RS-485-. Refer to the S8 Installation manual for more details.

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PVIA1 Valet to PVIA1 In-Wall w/SS1 or SC-4

Use the diagram in ***Figure 3-8*** to configure a S12/S6 system that utilizes an ELAN SS1 System Station or VIA! SC-4 System Controller. Use ***Figure 3-9*** to configure an S8.

Connect IR, V485+/-, and GND between the PVIA1 Valet Wall Plate and the PVIA1 Wall Plate. Connect a ELAN C45P to the screw terminal connectors and connect to the ELAN Multi-Room controller as shown. Connect an RJ-45 cable from the VIA!Net port on the PVIA 1 In-Wall Wall Plate and the VIA!Net port on an ELAN SC-4 or SS1 System Station.

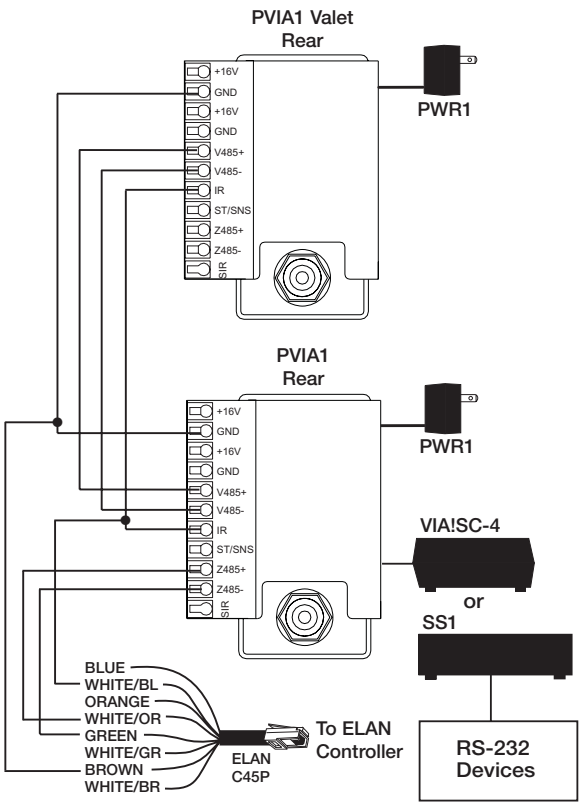

Figure 3-8: PVIA1 Valet to PVIA1 In-Wall/S12-S6

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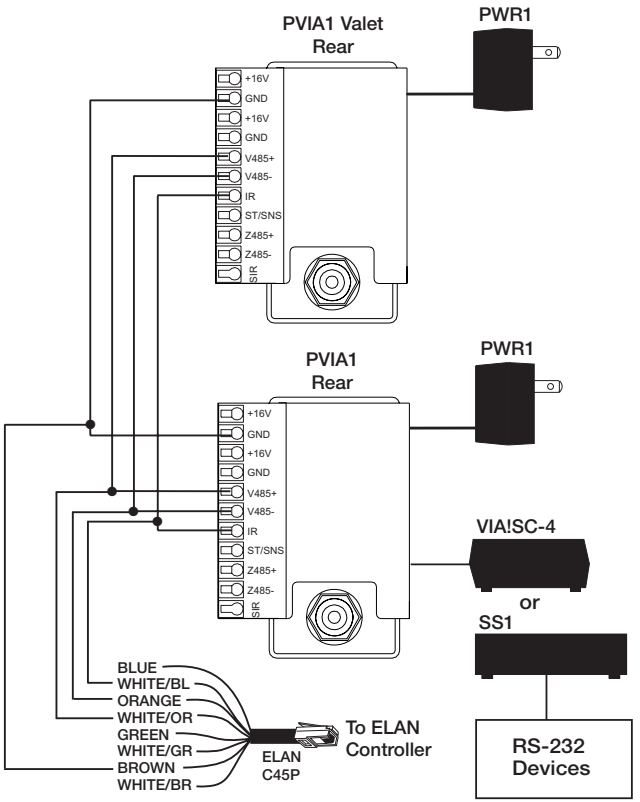

Figure 3-9: PVIA1 Valet to PVIA1 In-Wall/S8

Note: Unlike S12/S6 systems that generate ZNET information for status feedback, the S8 Controller, generates VNET information for status feedback. The S12/S6 utilizes the White/Orange stripe conductor for RS-485+ and Green for RS-485-. The S8 uses the White/Orange stripe conductor for RS-485+ and Orange for RS-485-.

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Composite Video Connections

Stand-Alone/Home Theater

There are many ways to integrate a VIA! Touch Panel in a Stand-alone/Home Theater application. Many Home Theater receivers, Satellite, and Cable boxes have secondary composite video monitor ports located on them that can be use to connect to the PVIA1 Wall Plate. Also, matrix video switchers like ELAN's Z•880 or V883 can be used to distribute video to the VIA! Touch Panel, Projectors and TV monitors throughout the home.

The PVIA1 Wall Plate features a pass-through video connector to conveniently allow for video access from a video source such as an Z•880, S12, S8 or V883 to a connected VIA! Touch Panel.

Connect the RG-59/RG-6 cable from the VIA! In-Wall Touch Panel location to the rear panel coaxial connector of the PVIA1 Wall Plate. Connect the video cable from the central equipment location to the front panel composite connector of the PVIA1 In-Wall. Use VIA!TOOLS setup software to assign video switching as required by the system's architecture. See VIA!TOOLS for detailed programming instructions.

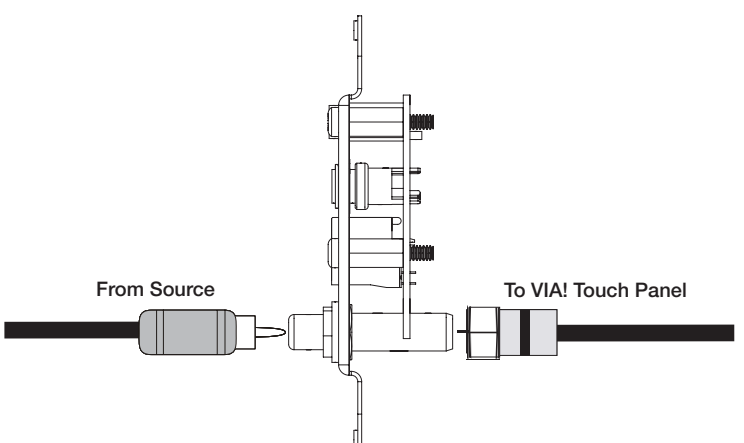

Figure 3-10: Pass-Through Video Connection

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IR Out - Front

The IR OUT port is a 3.5mm mono mini jack connection typically used to control a device that is part of the main IR system in a stand-alone application. IR is routed to an emitter as shown in ***Figure 3-10*** or an IR distribution block connected to the IR OUT and sent to the source components with IR emitters as shown in ***Figure 3-11***.

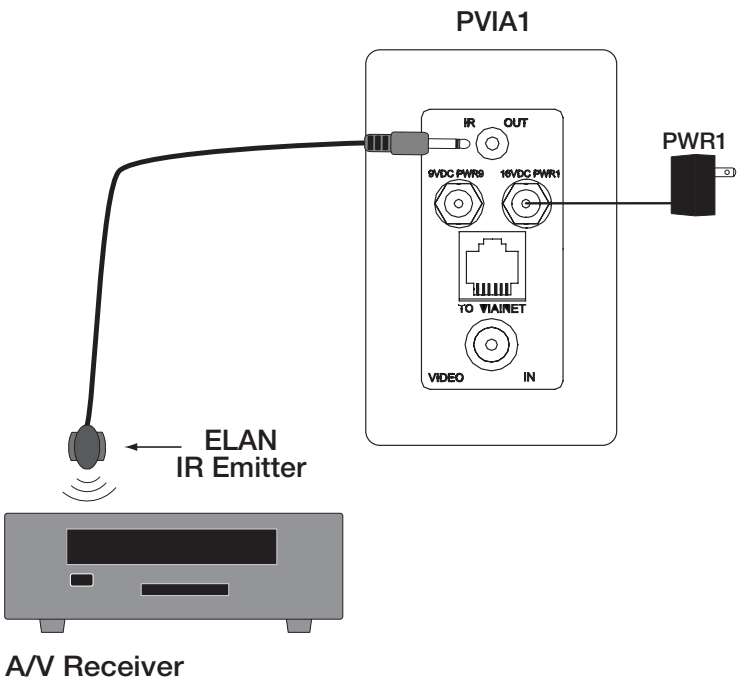

Figure 3-11: IR OUT

NOTE: When IR is connected to the front of the PVIA1 Wall Plate, IR pass-through on the rear is disabled

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IR Out - Front
Connecting Block

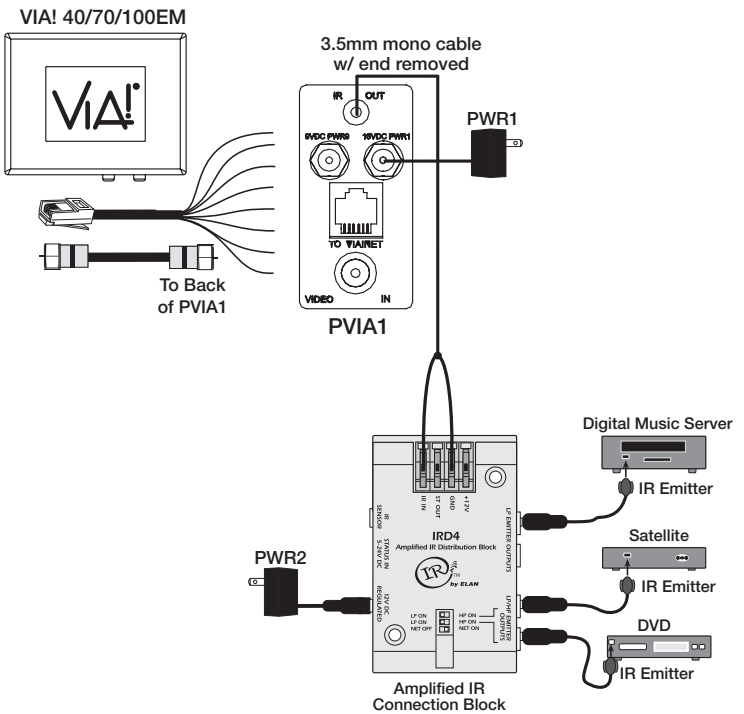

Figure 3-12: Front Panel IR Out to Connecting Block

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IR Out - Rear

The ELAN IRD4 is the perfect companion to the PVIA1 Wall Plate in a stand-alone application. The IRD4 is a single input, four output Amplified IR Connection Block designed to provide a convenient way of interconnecting IR control of source components to the PVIA1Wall Plate. This unit includes a robust, wide-bandwidth amplifier with reverse voltage protection so that it has the ability to drive both Mini-Emitters and High-Output Emitters reliably.

Connect IR OUT and GND from the rear panel of the PVIA1Wall Plate to CAT-5 cabling and terminate it to the IRD4 IR IN and GND. Connect IR Emitters from their Output ports and place on the source component IR Receive windows. Power up the IRD4 and with VIA!Tools programming downloaded to the VIA! Touch Panel the sources are ready to be controlled.

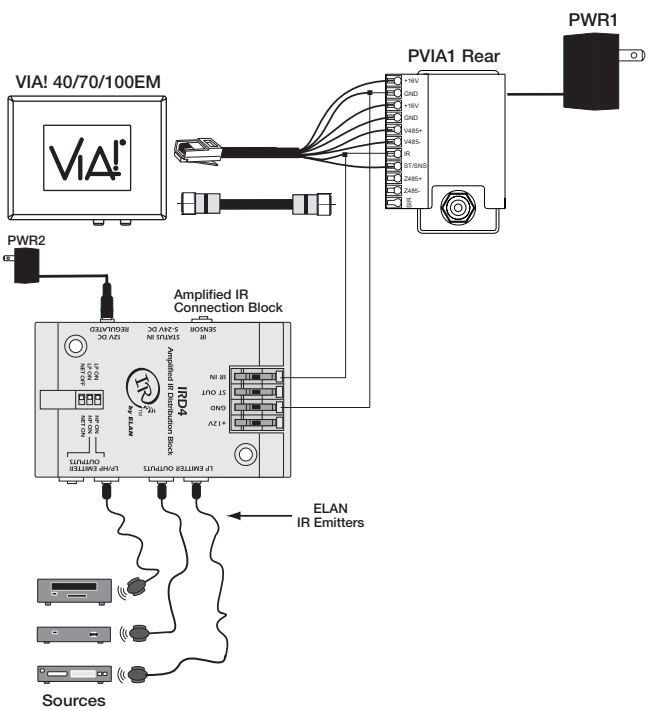

Figure 3-13: Rear Panel IR OUT to IRD4 Connecting Block

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POWER CONNECTION

Use an ELAN PWR1 16VDC/1.5 A power supply connected to the 16VDC PWR1 connector for one VIA! Touch Panel.

VIA! Touch Panels will be powered locally by the power supply that comes with the PVIA1 Wall Plate when used in a Stand-Alone application. When VIA! Touch Panels are used in a Multi-Room Systems they may be powered by the power supply used with the SPP Precision Panel. The SPP has connectivity provided for a PWR1, PWR4, and PWR10 Power Supply.

For complete SPP Applications & Connections refer to the SPP Installation Manual.

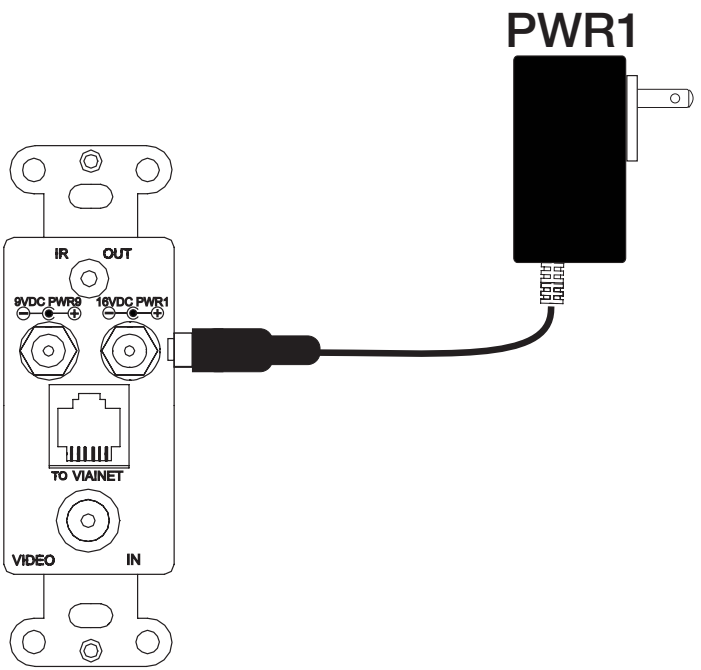

Figure 3-14: PVIA1 and PWR1

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POWER SENSE

In a stand-alone application the power status of an A/V receiver or cable box may need to be monitored when using the VIA! Touch Panel. System ON/Off status feedback will be displayed in the feedback window at the top of the screen of the Touch Panel. Connect an ELAN PWR9 9 VDC Power Supply into the 9 VDC connector on the PVIA1 Wall Plate and plug it into the switched outlet of the source device. The VIA! Touch Panel can then sense whether source voltage is present or not, and display feedback and execute macros based on the source power state. Power On and Power Off macros can be programmed for all Home Theater components using VIA!TOOLS. See VIA!TOOLS for detailed programming instructions.

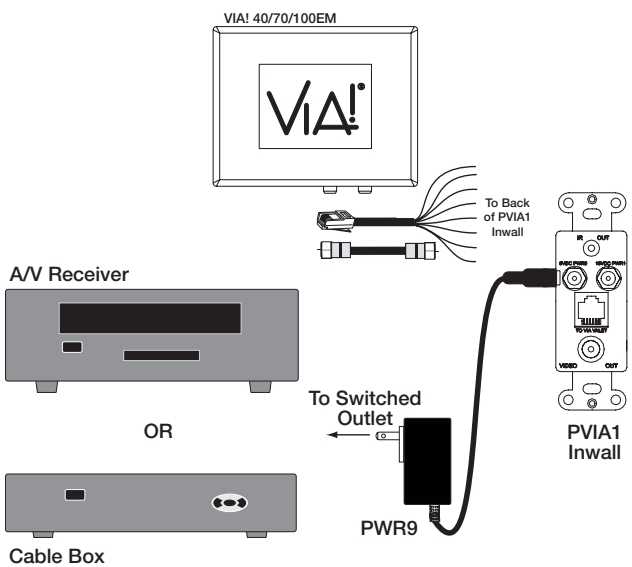

Figure 3-15: Power Sense Connection

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TROUBLESHOOTING

Symptom	Cause	Solution
VIA! Touch Panel connected to PVIA1 Wall Plate will not activate/ turn-on when screen is touched	1. No Power Supply Connected 2. Incorrect Power Supply 3. Power Supply defective 4. Incorrect power connections	1. Connect PWR1 or PVIA1 Power Supply 2. Use PVIA1/PWR1 16VDC Power Supply 3. Test for 16VDC with a multimeter 4. Verify power connections
VIA! Touch Panel connected to PVIA1 Wall Plate has no video displayed when TV or Camera icon touched	1. Video cable not connected or incorrectly con nected 2. Video In/Out connected back wards 3. Video source turned off	1. Verify video connections 2. Connect properly 3. Turn on source

Table 4-1: Troubleshooting

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APPENDIX A: SPECIFICATIONS

Specifications	
Connections	System Port (RJ-45), Video IN (composite connector), Video OUT (“F” connector) Power Terminal, Sense Power Terminal
Wiring Requirements	Cat-5 (Data), RG-6 or RG-59 coaxial cable (Composite Video)
Power	PWR1 16VDC 1.5Amp (included), PWR9 9VDC 100mA (optional)
Unit Dimensions	Length 4.1” Width 1.9” Depth 1.5” (L 104.14mm W 48.26mm D 38.1mm)
Unit Weight	2.7 oz (0.168 lbs)

Table A-1: Specifications

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Limited Warranty

ELAN HOME SYSTEMS L.L.C. ("ELAN") warrants the PVIA1 In-Wall to be free from defects in materials and workmanship for the period of two years (2 years) from date of purchase. If within the applicable warranty period above purchaser discovers that such item was not as warranted above and promptly notifies ELAN in writing, ELAN shall repair or replace the item at thecompany's option. This warranty shall not apply (a) to equipment not manufactured by ELAN, (b) to equipment which shall have been installed by other than an ELAN authorized installer, (c) to installed equipment which is not installed to ELAN's specifications, (d) to equipment which shall have been repaired or altered by others than ELAN, (e) to equipment which shall have been subjected to negligence, accident, or damage by circumstances beyond ELAN's control, including, but not limited to, lightning, flood, electrical surge, tornado, earthquake, or other catastrophic events beyond ELAN's control, or to improper operation, maintenance or storage, or to other than normal use of service. With respect to equipment sold by, but not manufactured by ELAN, the warranty obligations of ELAN shall in all respects conform to the warranty actually extended to ELAN by its supplier. The foregoing warranties do not cover reimbursement for labor, transportation, removal, installation or other expenses which may be incurred in connection with repair or replacement.

Except as may be expressly provided and authorized in writing by ELAN, ELAN shall not be subject to any other obligations or liabilities whatsoever with respect to equipment manufactured by ELAN or services rendered by ELAN.

THE FOREGOING WARRANTIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER EXPRESSED AND IMPLIED WARRANTIES EXCEPT WARRANTIES OF TITLE, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

ATTENTION: TO OUR VALUED CONSUMERS
To ensure that consumers obtain quality pre-sale and after-sale support and service, ELAN Home Systems products are sold exclusively through authorized dealers. ELAN products are not sold online. The warranties on ELAN products are NOT VALID if the products have been purchased from an unauthorized dealer or an online E-tailer. To determine if your ELAN reseller is authorized, please contact ELAN Home Systems at (859) 269-7760.v

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